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ABSTRACT

This report aims to disseminate research findings about reading programs for early elementary grades in a summary format useful for educators. The report features programs with clear descriptions and useful research, programs for non-English speaking children and research on basal reader series were not included. The four sections of the report address: (1) comprehensive classroom approaches to reading instruction (Cooperative Integrated Reading and Composition; Exemplary Center for Reading Instruction; Open Court; The Slingerland Approach; SRA Reading Mastery; and Success for All); (2) classroom supplements to reading instruction (Accelerated Reader; Junior Great Books; and IBM's Writing to Read 2000); (3) small group approaches to reading instruction (Alphabetic Phonics and Project Read); and (4) tutoring approaches to reading instruction (Auditory Discrimination in Depth, Helping One Student to Succeed; Programmed Tutorial Reading; Reading One-One, Reading Recovery, and Recipe for Reading). In each section, three aspects of each program are described: (1) instructional strategies and curricular contents incorporated by the program; (2) resources needed to implement the program; and (3) evidence of the program's effects. A list of elements of research-based reading programs concludes the report. Contains 73 references. (RS)

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READING PROGRAMS FOR STUDENTS IN THE LOWER ELEMENTARY GRADES:

What Does the Research Say?

August 1997

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TCER

READING PROGRAMS FOR STUDENTS IN THE LOWER ELEMENTARY GRADES:

What Does the Research Say?

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August 1997

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During the year we have spent working on *Reading Programs for Students in the Lower Elementary Grades: What Does the Research Say?*, many people have remarked on the importance of this document and have generously given of their time to improve its quality. TCER thanks publishing companies and program developers for offering materials for us to review, providing copies of research reports and evaluations, and reviewing drafts. This report could not have been published without their assistance. Thanks also go to the numerous expert reviewers who offered guidance and suggestions for improvement. We were well served by their honest feedback and helpful insights. Jean Osborn deserves special thanks for encouraging TCER to undertake the task of preparing this document. Her willingness to answer questions and her commitment to improving reading instruction in Texas are gratefully appreciated. Thanks also go to Claire England, Kay Thomas, and Belinda Nauseda who provided editorial assistance.

We gratefully acknowledge the support of these groups and individuals while noting that any errors or misstatements are entirely our responsibility.

This document contributes to important discussions about reading by presenting similar information about many different reading programs. This information can be used to guide decisions about creating balanced, research-based reading programs. TCER welcomes information about programs not included in this document as well as new information on programs that are profiled here. TCER hopes that this document helps districts and schools make critical decisions about reading materials.

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INTRODUCTION

Over the past decade, educators as well as noneducators have debated this question: Is reading best taught by focusing on skills or on language? At times this has been a heated conversation. Research now shows that it is not an "either-or" proposition—a reliance on one method to the exclusion of the other is neither sufficient nor necessary. Students need both systematic instruction in reading skills and in-depth exposure to meaningful language, in both spoken and written forms.

In the earliest years of schooling, students need instruction in the mechanics of written English. They need to know how letters combine to make words, how certain patterns of letters may consistently determine the pronunciation of words, how to apply what they know about letters and sounds, and how to decode words that are unfamiliar. As students learn decoding and other basic reading skills, they learn more about the meaning of written language. Students learn that words carry meaning and that by reading words they can be entertained, gain knowledge about particular topics, and get information about performing a task. Competent reading will carry a student through a lifetime of learning.

Teachers in the early elementary grades are faced with the crucial task of teaching students how to read. The job is made easier for some teachers when students come to school with thousands of hours of reading experiences gained from their families. These reading experiences may include hearing stories read aloud, singing songs, playing with magnetic letters on the refrigerator, reading freeway signs and billboards, watching educational television, and looking through hundreds of books. These activities help children develop reading skills and understand the meaning behind words. Unfortunately, many children do not receive exposure of this intensity. Because students come to school with differing skills, abilities, interests, and backgrounds, what they need to learn about reading will differ. This important point should be factored into any decision about reading materials and programs.

General Comments about Selecting Reading Programs

It is within the context of differing needs that educators face the difficult task of choosing among reading programs and materials to use to help students learn to read. Educators may want to keep these points in mind when reading this document or when selecting reading programs for students.

- A program that may be appropriate for one classroom or school may be inadequate for another. The key is understanding the needs of students. This understanding can be developed through teacher knowledge of students' skills and abilities and by analyzing test and other performance data for students.

- Teachers and students can and have created good reading materials. Not everything used to teach reading needs to be a commercially-prepared product.

- No one program will be sufficient for all reading instruction needs. Any published or self-created reading program, no matter how comprehensive, should be supported by other reading materials for children. Exposure to different kinds of reading materials helps children understand the use of print and expands their own understanding of reading and written language.

- The findings from research and evaluation should guide, not dictate, program selection.

A Word about Reading Research

In the past decade, researchers have learned a great deal about the acquisition of language and literacy. However, this body of research does not evaluate the quality or effects of reading programs offered in public schools. The trend in reading research has been to look into how children learn to read—not with what materials.

Independent program evaluations and research are available, but they do not always guide the selections of educators. When research is available, it may not be presented for educators to scrutinize along with the program materials. Instead, educators are likely to be told simply that "research shows" the program works.

The Purpose of this Report

This report is an attempt to disseminate research findings about reading programs for early elementary grades in a summary format that would be useful for educators. We have selected programs for which we found clear descriptions and useful research. We also selected programs that are either commercially sold or programs on which an individual or organization currently distributes information. In creating a list of programs to review, we consulted a list of reading programs approved by a federal panel, publications with lists or profiles of reading programs, recommendations of university researchers, and recommendations of educators familiar with reading programs. Once we had a list, we narrowed it to those reading programs that were appropriate for students in early elementary grades and that had research or independent evaluations about program effects on student reading. We did not search for research on programs for non-English speaking children nor did we explore research on basal reader series. Programs for non-English speaking children merit review in a separate publication; since Texas screens and reviews basal readers during the textbook adoption process, we did not see a need to duplicate that service.

We narrowed the selection further by profiling only those programs for which we could find evidence of program effects in the form of published research reports or articles. One source of evidence about program effects came from a list of programs recognized as exemplary by the U.S. Department of Education's Program Effectiveness Panel. We also looked for research and evaluation evidence that had these characteristics: (1) the study used control group designs with random assignment or provided evidence that comparison groups were initially equivalent in achievement; (2) the evaluation used standardized, broadly-based measures of reading; (3) the evaluation was conducted by a third party, not by the program publisher;[1] and (4) the evaluation had a duration of at least one semester.

After we analyzed the findings and prepared a draft report, we sent the review for each program in the report to the publisher, developer, or another entity with special knowledge about the program. We are indebted to program developers who provided feedback to improve this report.

This report is a starting point. The Texas Center for Educational Research welcomes information about programs not reported here that could be included in a subsequent edition of the report. It also welcomes updated information on programs that are profiled here or new evidence of program effects that will help educators make informed decisions about programs that will best meet the needs of students in their classes and schools.

Categories of Reading Programs

There are four sections to this document: (1) comprehensive classroom approaches to reading instruction, (2) classroom supplements to reading instruction, (3) small group approaches to reading instruction, and (4) tutoring approaches to reading instruction. In each section, three aspects of each program are described:

1. *Instructional strategies and curricular content incorporated by the program.* This section provides information about which grade-level children may use the program, the program's goal and instructional strategies, program content, and how the program is used in a classroom.

2. *Resources needed to implement the program.* Listed in this section are the resources each program requires for implementation, such as instructional materials, training, computer resources, facilities, and human resources. The level of resources needed varies widely. Where specific amounts and quantities are listed, these were verified with the publisher or distributor. However, the costs quoted in this publication should be considered the average for implementation. For a more exact quote for a school or district, it is best to contact the publisher directly.

3. *Evidence of the program's effects.* In this section, the available research studies and data are summarized. The sources of this information are not uniform and the quantity of information varies. As a result, the level of

detail provided for each program varies. For instance, *Success for All* has been heavily researched by individuals from several universities for almost ten years. Results on the effects of *Success for All* have been widely reported in academic journals, conferences, and books. On the other hand, *Programmed Tutorial Reading* is a small program from a Utah school district. The only available information was their National Diffusion Network submission report.

Comprehensive Classroom Approaches to Reading

Cooperative Integrated Reading and Composition

Program Description The *Cooperative Integrated Reading and Composition* (CIRC) program is a reading, writing, and language arts program for students in grades 2 through 6. CIRC is appropriate for regular, special, and compensatory education students. A major objective of CIRC is to increase student achievement in reading and writing and help students learn reading comprehension skills through the use cooperative learning models.

CIRC was designed at Johns Hopkins University in the early 1980s and was later incorporated into the *Success for All* program. Since that time, CIRC has been updated and is also referred to as Reading Wings. CIRC has three principal elements: (1) story-related activities, (2) direct instruction in reading comprehension, and (3) integrated language arts and writing. CIRC is considered a cooperative learning program: students are placed into small mixed-ability groups during all activities (Slavin, Madden, & Stevens, 1990).

The story-related activities typically begin with the teacher introducing a story to reading groups. After the story is introduced, the students do the following: (1) read with partners silently and aloud, (2) work on story structure and story-related writing, (3) learn to say new words smoothly, (4) work on word meaning by creating definitions and using words in sentences, (5) retell the story, and (6) practice spelling. Students' partners check the work their teammates have done. After demonstrating a level of success, individual students take a comprehension test.

Forty-four reading comprehension skills are taught through the CIRC program (Bramlett, 1994). Through class activities, teachers provide direct instruction in comprehension skills, and students practice these skills within groups (Slavin et al., 1996). For example, students are taught how to find answers to questions (such as who? what? and when?) about a story. Students also choose books to read at home every evening for 20 minutes and are required to get a parent's signature on a form that indicates fulfillment of the evening reading assignment.

Lastly, students participate in writers' workshops by writing at their own pace on topics of their choice. CIRC language arts activities direct students to

work with their peers and move through all stages of publishing a document: plan, draft, revise, and edit.

CIRC was approved by the U.S. Department of Education's Program Effectiveness Panel as a National Diffusion Network effective program.

Implementation Requirements The developers of CIRC have outlined several requirements for implementation. At least two teachers per school must receive two days of training (training is $800 a day for each person trained, plus expenses), with additional follow-up training recommended. Instructional materials include a structured sequence called Treasure Hunts, teachers' manuals, materials for teaching reading comprehension and writing, and a video explaining CIRC (Slavin, Madden, Farnish, & Stevens, 1995). Materials cost approximately $240 per class the first year and $100 per class in subsequent years. Costs vary according to the type of basal series or novels used in a school or district (A. M. Farnish, personal communication, January 1, 1997). A CIRC trainer is located in Houston, Texas. Additional information about CIRC may be found on its Internet home page: http://scov.csos.jhu.edu/sfa/overcirc.html.

Evidence of Program Effects Three evaluations of CIRC have been completed—two were associated with the *Success for All* research (Stevens, Madden, Slavin, & Farnish 1987) and another was conducted independently (Bramlett, 1994).

- The first study (Stevens et al., 1987) examined a 12-week implementation of the CIRC program with 461 third- and fourth-grade students (11 classes). Using standardized tests (the California Achievement Test) and writing samples, the achievement of CIRC students was compared to a similar group of students in 10 classes. The control students received reading instruction through traditional methods (typically a basal series with workbooks). On measures of reading and language arts achievement and writing, the CIRC students made significant gains in reading comprehension, reading vocabulary, language expression, and spelling. The achievement scores of CIRC students were significantly higher than those of the other group of students.

- The second study (Stevens et al., 1987) evaluated the CIRC program over a full school year in third- and fourth-grade classes that included students of differing abilities. Using standardized tests (the California Achievement Test), writing samples, and the Durrell Analysis of Reading Difficulty, the achievement of CIRC students was compared to a similar group of students in 13 classes. Significant differences favoring the CIRC students were found on measures of reading comprehension, language expression, and language mechanisms, but not on measures of vocabulary. Results for language arts and writing were less conclusive.

- The third study (Bramlett, 1994) examined the use of CIRC with third graders—194 students in the CIRC group and 198 in the control group. As measured by the California Achievement Test, significant differences in achievement favoring the CIRC students were found on measures of

reading comprehension, but not on measures of vocabulary, word analysis, or total reading. However, when examined according to ability levels, the bottom third of students in the CIRC program made significantly greater achievement gains than students in the control group along measures of vocabulary, word analysis, and total reading.

Exemplary Center for Reading Instruction

Program Description The *Exemplary Center for Reading Instruction* (ECRI) trains teachers to use specific teaching strategies that can be used in conjunction with most books or reading materials. The training program was approved by the U.S. Department of Education National Diffusion Network as appropriate for first- through tenth-grade teachers. ECRI is overseen by a private foundation (the Reid Foundation) in Salt Lake City, Utah. "The goal of ECRI is to improve elementary and secondary students' ability to use their language—that is, their ability to read fluently and with expression, to understand what they read and hear, and to use this understanding so they can communicate effectively" (ECRI, 1996, p. 1).

Through ECRI, teachers learn to teach word recognition, vocabulary, comprehension, study skills, spelling, penmanship, proofreading and writing skills, and literature. ECRI also trains teachers to incorporate reading and language arts into other subjects, use instructional strategies that prevent failure, and develop a classroom management system (ECRI, 1996). Through ECRI, teachers integrate language instruction (for example, students write and spell words they are learning to read) and emphasize students' expressive language skills (speaking and writing) as well as those of understanding ideas (listening and reading). ECRI trains teachers to focus on students' strengths (E. Reid, personal communication, December 17, 1996).

In a typical ECRI lesson, the teacher introduces new words and teaches a comprehension skill, a study skill, and a grammar or creative writing skill. The lesson also includes reviewing previously learned words and word recognition skills. In other types of lessons, students apply "backup" skills such as spelling, writing, and proofreading to what they have learned to read. Throughout the lessons, the teacher focuses on eliciting responses from students, providing time for supervised practice, teaching students to monitor their own progress and schedule their study time, and diagnosing and defining when errors occur or when students do not respond (ECRI, n.d.).

Students are assigned to reading groups based upon instructional reading levels. Within these groups, the teacher demonstrates skills and then prompts responses from students to ensure understanding. Students follow up with individual practice. This type of instruction has been referred to as a demonstration-prompt-practice model (Slavin & Madden, 1989). Student practice time is equivalent to the skills instruction time. During practice time, teachers work with individual students, test students for mastery, and work with smaller groups of students.

As a direct instruction and mastery teaching program, ECRI provides detailed and specific instructions for teachers and frequently assesses student progress (Slavin & Madden, 1989). Criteria for mastery are set according to performance and rate (ECRI, n.d.). Students learn to judge when they are ready to take a test. Written and oral tests are based upon performance and are administered individually.

Requirements for Implementation Training in basic ECRI techniques consists of a five-day seminar for groups of about 35 teachers. The training includes lecture and practice sessions, preparation of materials for classroom use, and simulated teaching. Teachers learn techniques for teaching students to schedule time and use a record-keeping system. Training beyond the initial five days is available but not required, and covers topics such as teaching study skills and content areas such as science or social studies with the ECRI method. Aside from the seminars, ECRI staff can periodically visit teachers' classrooms to model teaching strategies and monitor implementation. The honorarium for ECRI staff is $500 a day.

Although ECRI can be used with district reading materials, schools must purchase a set of 16 required teacher texts that costs $197 per teacher. Some titles of the teacher texts are *Teaching Letter Names and Sounds, Teaching Manuscript and Cursive Penmanship, Teaching Critical Comprehension,* and *Teaching New Words through Phonics.* Training and materials for 35 teachers cost approximately $9,395. Additional information about ECRI can be found on this Internet home page: www.xmission.com/~ereid/ecri.htm/.

Evidence of Program Effects ECRI was first approved by the U.S. Department of Education as a National Diffusion Network effective program in 1974 and was reapproved in 1990.[2] Achievement data have been reported for several groups of students in districts across the country.

- Comparative evaluation results provided by ECRI reported on its use in several Tennessee schools during the 1988-89 school year (ECRI, n.d.). Based on their standardized scores on the Stanford Achievement Test, students in grades 2 through 7 recorded significant and positive gains in reading comprehension (average 10.02 NCE gain) and vocabulary (average 8.80 NCE gain).[3] Achievement scores from another school in the same district were also provided. Before ECRI was implemented, the comparison group achievement levels were higher than the treatment group. At the end of the year, on almost every measure, the ECRI students surpassed the comparison group. The evaluation did not report certain information (such as the instructional strategies used by teachers of the comparison group of students) that would shed more light on these results.

- As part of the 1996 submission to the U.S. E.D. Program Effectiveness Panel, ECRI staff reported on the use of ECRI in Pickens County, Alabama. Two schools within the county implemented ECRI at grades 2 through 5, while a third school served as a comparison group. Scores from the Stanford Achievement Test show that the ECRI students made positive and

often significant gains on measures of reading, while the students serving as a comparison did not make gains in their scores.

- Slavin and Madden (1989) reviewed three studies reporting on student progress through ECRI. Those studies' findings suggest that ECRI could be an effective program for disadvantaged and low-achieving students. For example, one study found that students from low socioeconomic families, compared to a similar group of students, made positive advancements on measures of reading vocabulary and reading composition after instruction in the ECRI program.

Open Court

Program Description The *Open Court* (OC) reading program, *Collections for Young Scholars®*, is a reading and writing program for students in kindergarten through grade 6. This reading program can be used with regular education students, special-needs students, students reading below grade level, low-achieving students, and bilingual and ESL students. There are seven grade levels in OC. At each level, students may be taught in whole class activities, in small groups, or individually. OC is distributed by SRA/McGraw-Hill. According to information provided by the publisher, the goal of OC is for "all children to become independent readers, and to ensure this systematic approach is used to teach phonics."

As a direct instruction program, the OC reading program focuses on alphabetic and phonological awareness, phonics, and reading books that contain a high proportion of phonics elements taught through the program. Instruction is teacher-directed and explicit; teaching follows a system or established pattern of instruction. Phonemic awareness is taught in kindergarten and in the initial 30 lessons of the first grade reading program. In first-grade lessons 30 to 100, phonics is taught by introducing students to 43 common English sounds and their most frequent spelling patterns. Students learn and practice these sounds and spelling patterns using sound/spelling cards, alliterative stories, multisensory activities, blending, and stories with decodable text.

The key decoding strategy in this program is blending, where the teacher writes the spelling for each sound in a word, the students then say the sounds, blend the sounds together to read the word, then use the word in a sentence. Dictation and spelling and the word-building game further connect phonics to spelling. Initially, students learn to spell words by sound, progressing to writing whole words, and then to writing whole sentences.

The Open Court program also involves shared readings of big books, reading stories in anthologies, and writing workshop activities. In addition, students are engaged in reading activities that focus on learning to use reading comprehension strategies, developing vocabulary, and exploring ideas through various genres of reading materials (M. Roit, personal communication, January 5, 1997). OC introduces the reading of authentic literature to the classroom program in the middle of the first grade.

Implementation Requirements Training usually consists of a one-day grade-level overview including an introduction to materials; a discussion of a lesson; modeling of specific phonics techniques and comprehension strategies; and practicing specific phonemic awareness activities, phonics techniques, and comprehension strategies. Follow-up visits are made after a school or district has used the program for six to eight weeks. These sessions may include classroom visits, demonstration lessons followed by debriefings with grade-level teachers, or meetings with teachers. Additional training resources such as on-site visits by consultants, regional training, or summer institutes are available.

The core program is packaged in kits that provide classroom resources for teaching phonemic awareness and phonics. These kits are the *Sounds and Letters Kit* (kindergarten), the *Phonemic Awareness and Phonics Kit* (grade 1), the *Transition and Review Kit* (grade 2), and the *Phonics Review Kit* (grade 3). In addition to the kits, other instructional materials are available, including a teacher's guide, big books, student anthologies, practice books (i.e., little books that review phonics lessons), Teacher and Student Toolboxes, trade books, and student workbooks.

Pricing for training and instructional materials was not available at the time this report was prepared. According to an OC representative, the cost of implementing the program is comparable to other comprehensive, integrated reading programs (M. Roit, personal communication, January 5, 1997). The phonics components may be purchased separately to supplement a basal program.

Evidence of Program Effects *Open Court* has been available for thirty years. Marilyn Adams, author of *Beginning to Read* (1990), is the lead author for the newest editions of the kindergarten and first grade series. Recent evaluations of OC and the *Collections for Young Scholars*® have been conducted by researchers at the University of Houston (Foorman, Francis, Beeler, Winikates, & Fletcher, 1996). Their findings are summarized here.

- Foorman et al. (1996) found that OC brought economically disadvantaged, low-achieving first- and second-grade students close to the national average for reading achievement. In a classroom setting, 209 first- and 166 second-grade students received either explicit phonics instruction (through OC), a restructured Chapter 1 program,[4] or whole language instruction. Students receiving instruction through OC had significantly higher scores than students receiving whole language instruction.[5] As measured by the Woodcock-Johnson test and other reading measures, students receiving OC instruction and students in the restructured Chapter I program had higher scores along a number of dimensions including word reading, phonological processing, and spelling.

- In an analysis of tutorial interventions, OC and the restructured Chapter 1 program produced similar results—students achieved similar levels of word reading (Foorman et al., 1996).

The Slingerland Approach

Program Description The *Slingerland Approach* (SA), designed for whole classes of students, is an alternative to traditional reading instruction for beginning readers at risk of reading failure. Although the SA is discussed here in the whole class approach section, it may also be used with individual students and small groups of students. The approach was designed for implementation in kindergarten through grade 6 by Beth Slingerland, a primary school teacher. A goal of SA is to prevent reading problems, but it is also used to remediate them.

The Slingerland Screening Tests are used to identify specific language disabilities (SLD) in kindergarten or first-grade students. For students with reading problems, the SA replaces the traditional language arts curriculum (Clark & Uhry, 1995). Students typically receive SA for two years. The Slingerland curriculum has three components: learning to write, an auditory approach, and a visual approach.

Simultaneous, multisensory teaching strategies are included in every lesson. All language arts skills—oral expression, decoding, reading comprehension, spelling, handwriting, and written expression—are taught in an integrated direct instruction approach (White, 1995).

Because Slingerland is an approach to teaching, rather than a specific curriculum, it is compatible with any book or basal reading text (White, 1995). Slingerland is not described as a "phonetic program," although phonics is taught within its components (Ballesteros & Royal, 1981).

Implementation Requirements There are three levels of training for the SA. The introductory level—a four-week course held with a minimum of 12 teachers—consists of lectures, demonstration, and direct involvement with students. Training costs $688 per teacher plus other expenses. The second training level is for teachers who have used the SA methods; the third-year training course is for teachers who wish to become Slingerland trainers. Books and materials at each training level cost about $150 per teacher. The Slingerland Institute in Bellevue, Washington, oversees and coordinates training.

Evidence of Program Effects The available research analyzing the Slingerland Approach does not use standard research techniques that allow firm conclusions to be made. Generally, research reports indicate that students who have had the Slingerland Approach achieve some of the SA goals.

- A comparison of 15 students with specific language disabilities and three years of instruction with the Slingerland approach to 15 similar students and three years of conventional instruction reported positive gains for the SA students (McCulloch, 1985). Slingerland-trained children had significantly higher reading and language scores; no significant differences on measures of spelling existed (study described in Clark & Uhry, 1995).

- Lovitt and DeMier (1984) compared the reading gains of two sets of learning disabled students. Some received SA and others received instruction with a different individual tutoring program. Students in both groups made significant reading improvement along several measures of reading.

- Students receiving the SA made significantly greater gains than a comparison group on measures of listening comprehension; punctuation and capitalization; usage, grammar, and syntax; spelling; and study skills (Wolf, 1985). There were no significant differences among the students on other measures (e.g., word and sentence reading, vocabulary, and comprehension (Wolf, 1985; study described in Clark & Uhry, 1995).*

SRA Reading Mastery

Program Description *SRA Reading Mastery* (RM) is for students in kindergarten through grade 6. The publishers indicate that the curricula can be used with low-achieving students, special-needs students and bilingual and ESL students. Originally called Direct Instructional System for Teaching and Remediation (DISTAR), RM was developed by researchers at the University of Oregon and is now distributed by SRA/McGraw-Hill. This original program gained prominence during the 1960s and 1970s through its association with the federally funded study, Project Follow Through. One goal of RM is to teach every student to master the decoding process by providing reading instruction in a direct and clear fashion. Further, once mastering decoding, a RM goal is that students will be able to apply thinking skills so they can comprehend what was read (RM Program overview guide, n.d.)

The RM developers recommend daily reading lessons lasting approximately one hour. A typical lesson consists of group instruction and independent work. The RM series includes six levels. Although the levels roughly correspond to grade levels, different classes and groups within classes may progress through the materials at differing rates. There are from 120 to 160 lessons within each level. Lessons have high rates of teacher-student interaction. Instruction at every level includes group instruction and independent work. During group instruction, the teacher establishes a quick pace. Some schools begin the level one program in kindergarten and continue it in the first grade.

Information in each RM level is structured to introduce students to new concepts. This description provides an example of how all the levels are organized. Level I teaches phonological processing. In the first block of lessons in the level one program, pre-reading skills (including rhyming and other phonemic awareness activities as well as identifying letters as sounds) are taught. In the second block, students are taught to decode by learning to sound out words, blend, and rhyme words. In the final block of Level I lessons, students continue using their decoding strategies but are reading words much faster and with greater skill. Students learn comprehension skills through both oral and written activities throughout the entire series. Spelling activities are initiated about midway through the Level I sequence and are taught in a small group or whole class setting.

A screening and placement test is administered at the beginning of each level. Assessments occur at regular intervals. Each of these informal assessments focuses on what has been taught in the previous lessons. These assessments help teachers determine how well the students are progressing and help teachers place students in groups that best meet their individual needs. Slavin and Madden (1989) describe this program as a continuous progress model where students are taught in small groups that are homogenous in skill level, assessed frequently, and regrouped when necessary.

A unique feature of RM is the design of the instructional materials. The teachers' manuals provide exact wording and precise directions for everything the teacher says and does in a lesson (Clark & Uhry, 1995). The use of scripted materials does not preclude the need for teacher training and careful monitoring of instruction.

Implementation Requirements Prior to implementation, training consists of a two- to four-day session, during which teachers learn and practice procedures. The publisher recommends weekly inservice and collaborative practice sessions during the first three months of school. During these weekly sessions, teachers can practice and provide feedback on presentation techniques. Management, teacher and leadership training, and consulting services are also available to help implement the Direct Instruction programs.

The cost of instructional materials during the first year that RM is used varies between $65 and $100 per student, depending upon the number of children per classroom and the scope of implementation. According to the publisher, annual costs after the first year are $20 to $35 dollars per student, again depending upon which programs are used.

Evidence of Program Effects DISTAR, the precursor to RM, reported positive results for students. DISTAR was the only instructional program studied in Project Follow Through to have "consistently positive effects on the achievement of disadvantaged students" (Slavin & Madden, 1989, p. 31).

- Adams and Engelmann (1996) undertook a meta-analysis of research focused on Direct Instruction. Articles were included in the analysis if they meet several criteria. These criteria focused on quality of the research design, length of treatment, and implementation of the formal Direct Instruction curricula (which includes RM and DISTAR as well as other Direct Instruction programs in different subjects). An original search of more than 350 publications was limited to 37 articles once these criteria were applied. The results of the meta-analysis reveal that the mean effect size per study is large (more than .75). In other words, these studies' findings suggest that Direct Instruction can have a fairly large positive influence on student learning.

  Examining the effect sizes for those Direct Instruction programs that deal specifically with reading, language, or spelling are as follows: The mean effect size for reading (15 studies) was 0.69; for language (7 studies) it was

0.49; and for spelling (3 studies) it was 1.33. These findings combine various student groups in considering the effects of Direct Instruction language arts programs. That is, these effect sizes are calculated based on results with regular and special education students as well as elementary and secondary education students. Among the 34 studies included in the meta-analysis, five studies analyzed the effect of language arts programs on regular elementary students.[7]

- Meyer, Gersten, and Gutkin (1983) summarized the findings of the Abt evaluation on the use of DISTAR in Project Follow Through. The Abt evaluation compared several cohorts of DISTAR students (students characterized as low-SES, minority, and at risk of failure) with two groups: students in a local comparison sample who tended to be less disadvantaged than the Follow Through students and a pooled national comparison sample of 6,000 low-SES students. Upon entering kindergarten, the DISTAR students and the local comparison sample took the Wide Range Achievement Test (WRAT); four years later, both sets of students were tested with the WRAT and the Metropolitan Achievement Test. Following their years of DISTAR instruction, DISTAR students tended to score higher than the local sample on various measures, with significant differences found on measures of language. In addition, DISTAR students scored at or near the national average on all measures (i.e., reading, language, and math).

- Meyer (1984) examined long-term effects of DISTAR instruction on students in one Brooklyn elementary school. The author used information regarding high school performance and other long-term measures of success for both DISTAR students and a local comparison group. Students receiving DISTAR instruction had higher graduation rates, higher successful college application rates, and lower rates of dropping out of high school. The measures for retention were mixed. The DISTAR students also had significantly higher ninth-grade reading and math scores (as measured by the California Achievement Test).

Success for All

Program Description *Success for All* (SFA) is a multiyear schoolwide program of prevention and early intervention designed to "ensure that every student in a high-poverty school will succeed in acquiring basic skills in the early grades" (Madden, Slavin, Karweit, Dolan, & Wasik, 1993, p. 124). A primary goal of SFA is to bring every student to grade level in reading and other basic skills by the third grade. The theoretical basis for SFA is the idea that learning deficits must be prevented in a comprehensive manner emphasizing early education, improved curriculum and instruction, and intense intervention as early as possible (Madden et al., 1993). SFA was created by researchers at Johns Hopkins University in Maryland for use in elementary schools grades prekindergarten through 5.

There are nine main elements to *Success for All:*

- Reading tutors for one-on-one instruction
- Reading instruction in multi-age classes (according to reading level) for 90 minutes a day
- Reading assessments every eight weeks
- Early childhood education in the form of a half-day preschool and a full-day kindergarten whenever possible
- Family support team that works with parents to support education and provide assistance with problems at home
- Program facilitator who oversees the operation of SFA
- Teacher training in reading programs, classroom management, instructional pace, and cooperative learning
- Special education, used only as a last resort, conducted within the regular classroom and supplemented with tutoring
- Advisory committee (comprised of the Title I liaison, vice-principal, counselor, facilitator, and other staff members) that meets to review the progress of SFA

The reading portion of SFA is delivered using two methods: one-on-one tutoring and grouping based upon reading performance levels (Slavin et al., 1996). Students who need the most help receive 20-minute daily tutoring sessions in eight-week increments. During these sessions, tutors focus on objectives that correspond to the regular reading curriculum. The beginning reading program for kindergarten and first grade students is referred to as Reading Roots. Once students reach the primer reading level, they use the Cooperative Integrated Reading and Composition (CIRC) program or its most recent adaptation, Reading Wings.

During daily 90-minute reading sessions, students are assigned to groups based upon reading level. In every grade, the teacher begins the lesson by reading literature to students and engaging students in a discussion about the story. In kindergarten and first grade, the program emphasizes development of oral language and prereading skills. Teachers focus on developing book and print awareness, phonemic awareness, and knowledge of story structure through various activities. These activities include the use of big books and a component called Story Telling and Retelling where students listen, retell, and act out a story.

In the second half of kindergarten or beginning with first grade, the reading program begins to focus on teaching phonics, comprehension, and metacognitive strategies. The program uses phonetically regular minibooks and emphasizes repeated oral reading between pairs of students and between student and teacher. Letters and letter sounds are taught first through oral language and then through written language. Once students reach a specified reading level, they use the CIRC program.

Implementation Requirements According to the developer, the costs of SFA average $50,000 per school in the first year for materials and training, plus salary costs for staff within the school. Typically, Title I pullout teachers and classroom aides exchange roles to operate SFA. Because it is a schoolwide

program, many schools use Title I funds to implement the program. Madden et al. (1993) report that program costs and savings from successful student education outweigh the costs of normal Title I and special education programs and typical retention rates for Title I students.

The implementation of SFA includes more than adopting a new reading program: it requires teacher training in the reading programs, a program facilitator, and a substantial school commitment in addition to several school and family committees. An 80 percent positive vote of the whole school staff is required by SFA for program adoption. Additional information about SFA may be found on its Internet home page: http://scov.csos.jhu.edu/sfa/sfa.html.

Evidence of Program Effects On the basis of evaluations spanning several years, researchers have reported consistent and positive results with SFA.

- *Reading.* Studies comparing SFA and control students have been carried out in 23 schools and nine districts, nationwide (Slavin et al., 1996). In most cases, students in SFA schools scored significantly higher on various measures of reading achievement (i.e., Woodcock Reading Mastery Test and Durrell Analysis of Reading Difficulty) than students from control groups. On average, SFA first graders scored almost three months ahead of control students; by fifth grade, differences exceeded a full grade equivalent. A follow-up study found that the one-year difference remained through seventh grade (R. Slavin, personal communication, November 7, 1996).

- *Special education.* Studies in several districts have found 50 percent reductions in special education placements for learning disabilities. Among Baltimore SFA schools, only 2.2 percent of third graders were referred to special education compared to 8.8 percent of control third graders (Slavin et al., 1996). The reading scores for SFA students in special education were substantially higher than students in control schools (Smith, Ross, & Casey, 1994).

- *Retention.* Substantial reductions in retention rates were found for the original Baltimore SFA schools. Eliminating retentions occurred more rapidly in schools that had more resources with which to implement SFA than in schools with fewer resources. Among a group of five schools, retention rates ranged from 0 to 1.9 percent. These schools had previously reported retention rates of 6.7 to 10.7 percent (Madden et al., 1993).

Classroom Supplements to Reading Instruction

Accelerated Reader

Program Description The *Accelerated Reader* (AR) program is a computer-based reading and management program for students in grades kindergarten through 12. It is appropriate for both regular and compensatory education students. AR is designed as a supplement to the regular classroom reading program. It was developed at and is distributed by Advantage Learning Systems (a publishing company in Wisconsin). One major goal of AR is to "increase literature-based reading practice" (Paul, VanderZee, Rue, & Swanson, 1996, p. 3).

To use AR, a student chooses a book from the AR book lists. The current AR program lists more than 11,500 different books covering a variety of subjects, cultures, and grade levels ("Research on technology," 1994). These book lists provide choices for first through high school students. After reading the story, the student answers a series of multiple choice questions that test the student's knowledge and comprehension of the story. Tests vary in the number of questions (from 5 to 20). After the student takes the test, the computer lets the student know how many answers are correct and awards points based upon the length of the book, the difficulty of the book, and the number of questions answered correctly.

The unique feature of AR is its management system. The computerized system has the capability to track student progress and create several reports. The reports are organized to provide information on, for example, individual student progress, progress for groups or classes of students, and numbers of books read.

Implementation Requirements The AR early grades or elementary grades starter-kit, which includes the AR software, test disks, book lists, and a user manual, costs approximately $399. The schoolwide economy kit (which costs $1,499) provides additional test disks and a video which describes how to use AR. Supplemental materials such as a service contract and motivational materials for students (e.g., posters, buttons, t-shirts) are also available. A training session for up to 15 people costs approximately $2,400. Training helps teachers learn how to use the program, work with and maintain student records, and create reports. More advanced training is also available. Additional information about system requirements and the program is available at the Accelerated Learner Internet home page: www.advlearn.com/.

Evidence of Program Effects Evidence for program effects of AR is provided by independent researchers and by an evaluation study conducted by Institute for Academic Excellence (a subsidiary of Advantage Learning that provides research and professional development services).

- Vollands, Topping, and Evans (1996) compared the use of AR with 27 sixth-grade students to a similar group of 12 sixth-grade students. After using AR for six months, the AR students showed statistically significant increases above the control group of students on measures of silent reading comprehension, oral reading accuracy, and comprehension.[8]

- Peak and Dewalt (1994) selected a group of 50 ninth-graders from two junior high school college-prep classrooms to analyze the effects of AR. Half the students had used the program since fourth grade, whereas the other students had never used the program. Beginning with third grade, the non-AR students had a higher average reading score (724) than the AR students (716). In later testing years, the AR students scored higher than non-AR on reading measures. By the end of the eighth grade year, AR students had an average reading score of 788 and yearly average reading gains of 13 points. Non-AR students had an average reading score of 766 and yearly average reading gains of 5.5 points.[9] Another difference was that AR students reported reading more hours per week and checking out of the library more books per grading period than the non-AR students.

- A study conducted by the Institute for Academic Excellence examined the use of AR in 2,511 Texas schools (Paul, VanderZee, Rue, & Swanson. 1996). Comparing the Texas Assessment of Academic Skills (TAAS) pass rates of AR schools to the median TAAS pass rates of non-AR schools, the authors found that at all grade levels tested (except tenth grade) the AR-schools tended to score above their cohort's median on the TAAS reading and writing test. The proportion of AR-schools scoring above their cohort's median ranged from 53 percent (in third-grade reading) to 58 percent (eighth-grade writing); in each case the difference is statistically significant.

Junior Great Books

Program Description *Junior Great Books* (JGB) is a literature-based program for students in grades 2 through 6, intended for use in up to five class periods of instruction per week for one or two 12-unit semesters. It is appropriate for students in regular and compensatory education programs. A companion program, *Junior Great Books Read-Aloud,* is available for kindergarten and first-grade students. The goal of JGB programs is to "instill in children the habits of mind that characterize a self-reliant thinker, reader, and learner" (Great Books Foundation, 1992, p. ix).

The current JGB program was developed by the Great Books Foundation from student programs introduced in 1962 and from adult programs introduced in 1947. The original programs featured interpretive discussion and have a long history of use with high-ability students. Teacher requests for activities to help average and less-able students work through the reading process and take part in interpretive discussion spurred the development of the current JGB. It features integrated units of story-specific activities with an interpretive focus to use with students of differing abilities (JGB, 1992).

Junior Great Books is designed to teach students to interpret and think critically about literature. JGB uses a method known as shared inquiry, which involves discussions characterized by four features (Criscuola, 1994).

- The shared inquiry discussion focuses on an interpretation question; that is, a question about the meaning of the text which has more than one valid answer.
- Literary works used are selected for richness of meaning and for their ability to support discussion.
- The teacher focuses and directs the discussion toward interpretation rather than checking facts.
- Students originate and develop their own interpretations, supporting them with evidence from the text.

In a JGB unit, students first read a selection and consider their questions about it, offering possible responses. A second reading provides an opportunity for students to take notes on the story using an interpretive question as a prompt. A word-meaning activity asks students to look back at the text to trace multiple meanings of significant words. The intensive shared inquiry discussion caps the unit. Finally, students reflect on their personal reactions to the text through writing activities.

In 1993, JGB was approved by the U.S. Department of Education as a National Diffusion Network effective program.

Implementation Requirements The Foundation provides three levels of teacher training. All people who intend to lead JGB Shared Inquiry discussion and interpretation activities are required to complete the Foundation's beginning-level Basic Leader Training Course (two days, ten hours of instruction). One-time start-up costs per class are tuition for the Basic Course ($99 per teacher) and a Teacher's Edition ($21.95 per semester). The intermediate-level Curriculum Course offers instruction, modeling, and practice in the interpretive activities. Advanced training in assessment and peer mentoring plus custom-designed consultation days are also available. Courses require a minimum enrollment of 24, with a maximum of 40. Training costs vary depending on the quantity of JGB materials purchased.

For each semester, students use an anthology of 12 stories and a student activity book. A Teacher's Edition contains annotated student text and instructions for activities. Student materials include the anthologies ($10.95 each per semester). Because students take notes in these books, JGB recommends that these be used as consumable materials. Activity books may be purchased for each student ($4.95 per semester, per student) or duplicated. Excluding the costs of training and teacher materials, costs for a class of 30 are $507 for each semester. Additional information about the program is available at their Internet home page: www.greatbooks.org.

Evidence of Program Effects Evidence for program effects of JGB is provided by independent researchers and by an evaluation study conducted by the Great Books Foundation, which resulted in the National Diffusion Network certification.

- The Great Books Foundation conducted an evaluation to learn whether adding JGB to the regular curriculum would enhance learning for students of varying skill levels in heterogeneous classrooms. In an 18-week study that involved pre- and post-testing of 420 JGB third-grade students and 300 students in a control group, students using JGB made significantly greater gains on the Iowa Test of Basic Skills (ITBS) reading vocabulary subtest than control-group students. They also developed interpretations with evidence from text at a significantly higher rate in a written and oral performance assessment than control-group students (Great Books Foundation, 1991).

- A study of the use of JGB with 30 fifth-grade students found that both high-ability and low-ability students improved their reading comprehension (as tested by ITBS) after using JGB. Students benefitted the most when the JGB selections were both read and discussed, lesser gains were reported when the JGB selections were read and summarized (Heinl, 1988). It is difficult to state whether these gains were significant since pre-implementation scores were not reported for the students.

- A rural Texas elementary school used JGB with students in grades kindergarten through 6. After using JGB for two years, students scored significantly higher on reading mastery as measured by TAAS. Particular improvement was noted in making inferences and generalizations and in understanding relationships and outcomes ("Ingram students," 1996).

- One study (Biskin, Hoskisson, & Modlin, 1976) compared how different questioning techniques effect students ability to recall stories. Three groups of Title I students in a summer school program (from first- and third-grade classes) were randomly selected. After listening to a teacher read two stories, one group was led through a discussion of the book using the questioning techniques of JGB which emphasizes reflection. A second group discussed the books using a directed questioning technique that emphasizes prediction. The third group, a control group, was not led in any discussion. Immediately following the reading and discussion, students were asked to retell the story; their stories were analyzed to determine how accurately they remembered information about the story (i.e., characters, events, plot, and theme). The analysis revealed that the students in the reflective questioning group (i.e., JGB students) recalled more information, with significant differences found on how well they recalled information about characters and events. A delayed test (two weeks later) where students again retold the story showed that students in the reflective questioning group had more stable scores than either of the other two groups. The authors conclude that asking students to reflect on the story helps them retain more information about the story.

IBM's Writing to Read 2000

Program Description *IBM Writing to Read 2000* serves kindergarten and first-grade students but may also be used with second- and third-grade students who are not yet reading. A primary goal of WTR is to increase the reading and writing performance of kindergarten and first-grade students. WTR was originally created by an educator and retired superintendent (Dr. John Henry Martin) in cooperation with IBM. Since that time, Writing to Read has been updated to incorporate new technology and to address feedback from teachers. The new program is called *Writing to Read 2000* (WTR 2000).[10]

WTR 2000 is based on the idea that children can learn to read by first learning to write anything they can say. Students visit a WTR laboratory for one hour a day and rotate among six learning stations:

- At the Computer Station, students receive phonics instruction that includes learning sound and letter relationships through the use of "cycle" words (i.e., words that represent phonemes, such as cat, dog, or fish).
- At the Work Journal Station, lessons from the computer station are reinforced.
- At the Writing/Typing Station, students write their own stories.
- At the Make Words Station, students work with manipulative items to learn letters, phonemes, and words.
- At the Listening Library Station, students listen to literature on tape players.
- At the Activity center, students practice making letters using tactile materials (such as using clay to shape letters).

It is the computer station of WTR 2000 that sets it apart from other reading programs. Compared to the earlier version, WTR 2000 places more emphasis on blending sounds, includes new games, and is more interactive.

Implementation Requirements The WTR 2000 software for one computer terminal costs approximately $1,600 and for a local-area network the cost is approximately $4,900. A three-day training session for a maximum of 20 people costs approximately $2,250 ($750 a day) plus travel expenses. Training helps teachers understand the concepts, philosophy, and practices of WTR 2000. The WTR 2000 software can be used with a 386 (or better) computer processor. For purposes of training, each individual must have a work station. Supplemental materials such as work journals, book sets, library tapes, and the teacher's guide are available. Additional information about system requirements is available at the WTR 2000 Internet home page: www.solutions.ibm.com/k12/solutions/tlc/rla/wtr2000.html/.

Evidence of Program Effects The studies summarized here are evaluations of the original Writing to Read program. The program has been updated since this research was conducted.

- The Educational Testing Service (1984) conducted a large-scale study of WTR and determined that it was an effective educational program. They

concluded that kindergarten and first-grade students do learn to read in this program (ETS, 1984). Compared to students not in WTR, kindergarten and first-grade students in WTR did learn significantly more in writing, and kindergarten WTR students outperformed others on reading measures. However, there were no significant differences between first-grade students in WTR and first-grade students not in WTR on measures of reading. Measures included various standardized reading tests, a graded sample of student writing, and a standardized list of spelling words.

- In a review of WTR research, Slavin (1991) found that WTR had a small but positive effect for kindergarten students but did not positively effect the reading achievement of first graders. This review also suggested that WTR gains were not maintained after leaving the program.

- A study of WTR conducted by the Texas Center for Educational Research (1992) resulted in conclusions similar to those of the Slavin (1991) review. No clear pattern of statistically significant results emerged from the analysis, based upon measures gathered from the standardized tests usually administered by local districts. WTR was not found to be consistently more effective in improving reading or writing scores for kindergarten and first-grade students in the WTR group than traditional instruction was for students in the control group.

Small Group Approaches to Reading

Alphabetic Phonics

Program Description *Alphabetic Phonics* (AP) is a multisensory approach for teaching reading (including decoding and comprehension), spelling, oral expression, and handwriting to dyslexic students from elementary through high school. AP is based on Orton-Gillingham approaches for teaching dyslexic students and was developed at the Texas Scottish Rite Hospital for Children in Dallas (TSRH). It was originally designed as a tutorial program (with one student) but has been modified to accommodate small groups. One goal of AP is to teach students the structure and coding patterns of the English language.

Its pre-packaged version, Multisensory Teaching Approach (MTA), and a collection of 360 video tapes, the Scottish Rite Dyslexia Training Tapes, are both based on Alphabetic Phonics. The Multisensory Teaching Approach, a source of materials, has been described as "Alphabetic Phonics in a box." MTA is specifically intended for use in whole classrooms with regular students and as a remedial program.

Each daily AP lesson includes 11 activities and takes an hour to complete. AP includes the following elements:

- Orientation to language
- Alphabet recognition
- Reading flash cards designed to develop automatic recognition of letters
- Spelling flash cards used to develop sound and symbol knowledge
- New learning of sound-symbol correspondences
- Reading practice
- Handwriting practice
- Spelling practice
- Verbal expression and phonemic awareness activities
- Review of the lesson learned earlier in the session
- Listening or reading comprehension

The term alphabetic phonics refers to a structured system of teaching students patterns in the English language (Clark & Uhry, 1995). The AP program focuses on the characteristics of written English, especially phonology and letter sequence. Reading materials are phonetically controlled. Materials for AP are either collected by the teacher or purchased as part of the MTA program.

Implementation Requirements Teacher training is the primary requirement for implementation of this program and has several levels. Alphabetic Phonics includes an overview course (25 hours of general information about dyslexia and learning disabilities), a basic introductory course (90 hours of training), and advanced training (45 instructional hours) with 700 hours of supervised practice required for certification. The cost for the basic class is $825 and includes instructional materials. Costs for the other classes are available from the program developers at the Neuhaus Center in Houston or TSRH.

Evidence of Program Effects The research consistently reports favorable results with Alphabetic Phonics and MTA. However, with few exceptions, the research studies on Alphabetic Phonics do not include a control group with which to compare progress; in those cases, gains cannot be completely attributed to AP.

- Davenport, Pickering, and McIntyre (1995) reported on a study comparing two different types of reading remediation programs (AP and Sequential English Education (SEE)). Both programs were structured, multisensory, phonetic approaches to teaching reading. Sixteen students who had a reading deficiency were assigned either to AP or SEE (eight students in each group). On measures of reading accuracy, comprehension, and spelling, the mean scores for both groups increased after receiving instruction in either AP or SEE. There were, however, no significant differences in improvements.

- Reed, Selig, Young, and Day (1995) studied the effect of AP on a group of learning disabled students. From an initial group of 999 elementary, middle, and senior high school students, students were randomly selected to take standardized tests in reading (245 students) and spelling (255 students) prior

to and following instruction in AP. Analysis of the testing results show that students made positive and significant gains in both reading and math.[11] The greatest gains were posted by elementary students and senior high school students on the reading test and elementary students on the spelling test.

- Black (n.d.) studied the achievement of dyslexic students participating in Alphabetic Phonics and DTP (the videotape version of AP) compared to a control group of dyslexic students who received a different type of remedial instruction. Students receiving AP and DTP instruction made statistically and "clinically" significant improvement in decoding skills, word recognition, and reading comprehension, but not spelling.

- Frankiewicz (1984) evaluated the use of AP over four years. Participants were learning-disabled students in the sixth, seventh, and eighth grades. The author reported that all students made significant gains in reading and spelling above what would normally be expected for this population.[12]

- The use of MTA over a four-year period for both remedial and nonremedial instruction resulted in improved reading and spelling scores for 426 students in grades 1 through 3 and grades 5 and 6 (Vickery, Reynolds, & Cochran, 1987). Students in grade 4 did not improve over their baseline scores.[13]

- Reed and Day (1995) reported on the use of AP for 58 ninth grade students compared to a control group of 19 ninth grade students enrolled in a high school's regular program. The authors concluded that the treatment group made statistically significant gains on all subtests and that treatment students improved significantly more than students in the control group on all measures (Reed & Day, 1995). However, the treatment group did not surpass the control group on measures of spelling and reading.[14]

- Birsh and Hatfield (1995) reported that regular education students in the first, second, and third grade were taught using a modified version of AP. First-grade students made gains on two subtests (letter/sound and listening); less advanced second-grade and third-grade students made gains on tests of total reading.[15]

Project Read (Enfield & Greene)

Program Description *Project Read* (PR) is an alternative reading program for students in grades 1 through 12 who are reading at the lowest levels and/or identified as learning disabled. Project Read may be used in a classroom or resource room with regular education, special education, or Title I students. It was originally created by two educators in a Minnesota public school district.[16] The major goals of the program are to provide cost-effective reading instruction to students who are not learning with the traditional program and to increase coordination between regular classroom and special education instruction.

It is described as a systematic, direct, multisensory learning experience (Enfield, 1987). As a highly structured, language arts program, it provides instruction in three components: decoding, reading comprehension, and written expression. These components roughly correspond to certain grade levels: decoding (also referred to as phonology) is targeted to students in grades 1 through 3, reading comprehension is targeted to students in grades 4 through 12 who need direct, multisensory teaching, and the written expression strand is appropriate for students of all ages beginning with grade 1 through adulthood. These three strands are integrated, but some receive more emphasis than others in particular grade levels.

In the first component, the curriculum progresses from the most basic phoneme unit to more complex phonemes and from most frequently used to least frequently used. With the comprehension strand, students begin with vocabulary development eventually moving into learning various compositional forms. In the last component, students again go through a progression beginning with letter formation, to encoding, to sentence structure and the mechanics of writing, to forms of written composition (Enfield, 1987). The program incorporates multisensory concrete instruction in each component of instruction. PR uses specific series of instructional materials (e.g., SRA Basic Reading or McGraw Hill Reading for Concepts), although alternative materials may be substituted.

Implementation Requirements A four- to five-day teacher training course is recommended in each curriculum component. Training in the program can be obtained from several sources: Language Circle Enterprises in Bloomington, Minnesota (headquarters for PR); endorsed Language Circle consultants who come to the school district; or from local teachers who are qualified to train others in PR. Costs for training vary depending upon the source—they range from $100 (for an endorsed consultant) to $1,800 (for one person to attend training in Bloomington) plus expenses. Teaching texts and materials vary by curriculum component from $125 to $200; student costs vary from $100 to $200 per student per year. For additional information, PR's Internet web page is www.projectread.com/.

Evidence of Program Effects Although research regarding the effects of PR is limited, that which is available generally concludes that PR meets its goals.

- Greene (1995) analyzed data from a pilot study conducted in regular education classrooms in Louisiana. Two hundred and twenty-four students (112 experiment and 112 control students) were included; some of these students were involved in Chapter 1 programs. Analysis indicated very large and positive differences between the gains made by PR students compared to the gains of the control group. The largest gains were among the first grade students.

- Enfield (1976) conducted a pilot project among 45 students (grades 1 through 3) who were reading below the 25th percentile. Compared to a matched control group of students, the Project Read students scored significantly higher on measures of reading and spelling (study described in Clark & Uhry, 1995).

- After collecting data over three years, Enfield (1976, study described in Clark & Uhry, 1995) tested a random sample of 665 students in grades 1 through 3 on measures of reading and spelling. Findings from that study were that: (1) students using PR made significant gains in reading and spelling; (2) significantly fewer PR students required tutoring at the end of the three years; (3) PR students had greater yearly gains than students in previous programs; (4) the costs per pupil were significantly reduced as compared to tutoring programs; and (5) the number of students falling below grade level were reduced across the district.[17]

Tutoring Approaches to Reading

Auditory Discrimination in Depth (Lindamood-Bell)

Program Description The *Auditory Discrimination in Depth* (ADD) program is a highly structured tutoring program for prekindergarten through adult students. Children and adults who cannot read or spell because of a lack of phonemic analysis skills may be taught with ADD or it may be used to increase the auditory-perceptual awareness of kindergarten students (Clark & Uhry, 1995). ADD may also be adapted for use in a classroom setting or with small groups of students. One goal of ADD is to develop phonemic awareness among students and teach students how to apply this awareness to reading and spelling (Lindamood, 1995) although the "ultimate objective is to have the client develop 'automaticity' in the decoding process" (Truch, 1994, p. 64).

The program assumes that information from the eye, ear, and mouth is used to identify, classify, and label sounds which leads to a greater understanding of the sounds. Each student in the ADD program follows the same basic sequence. First, students are trained to be aware of consonants and vowels. More specifically, students learn about the speech actions that produce phonemes, and they learn how to identify, classify, and label phonemes. For instance, students learn that the sounds /p/ and /b/ are labeled "lip poppers" because of how the lips, teeth, and tongue are positioned when making those two sounds. Next, students learn to identify and name the sound categories using colored blocks to represent sounds. Colored blocks are used to distinguish phonemes.

Students then apply this knowledge to spelling and reading. First, students use letters printed on tiles for spelling and then use their own writing skills to spell words. Instruction in distinguishing between phonetically regular words from irregular words occurs at this point. The final stage involves learning to read. Following the same system with learning to spell, students begin with lettered tiles then move to print.

The ADD program uses a "guided discovery" method where the teachers question students to help them discover the alphabetic principle on their own. The program emphasizes self-correction by the students.

Implementation Requirements Training for ADD occurs in two five-day seminars at the Lindamood-Bell Learning Processes Center in California. The first session covers theory and demonstrates concepts and techniques. The second session entails the practical application of those concepts and techniques. Training is provided in other areas outside of California. Materials for ADD include the manipulatives, card sets, and teachers guides. The complete set of materials costs approximately $350. The ADD program is distributed by one company (Pro-Ed), while training and development is managed by the Lindamood-Bell Learning Center. For additional information, their Internet web pages are, respectively: www.proedinc.com/ and www.lblp.com.

Evidence of Program Effects One study of ADD examines its effects in a classroom setting. This study employs a control group in its design and reports favorable results. In two other studies summarized below (Alexander, Andersen, Heilman, Voeller, & Torgeson, 1991; Truch, 1994) a control group was not part of the research design. Both studies report positive results, but should be interpreted with caution.

- McGuinness, McGuinness, and Donohue (1995) adapted ADD for use in a classroom setting. The study involved two experimental classes (15 first-grade students in each) and one control group (12 first-grade students). The teachers integrated the ADD program into their regular instruction. One teacher used a modified whole language approach along with the ADD program while the other teacher integrated ADD into her regular Montessori instructional program. The control teacher also used a modified whole language program that built upon prior phonics instruction. At pre-test, there was no significant difference between the student groups on several reading measures. At the end of the school year, students instructed with ADD had significantly different scores on several reading measures (i.e., word identification and word attack). The fact that there was no significant difference on phonological awareness was interpreted by the authors to mean that phonological processing is a necessary but insufficient condition for reading success.

- The Alexander et al. (1991) study examined the use of ADD with a group of 10 severely dyslexic students. Students, who ranged in age from 10 to 12, received training in one of two settings. Seven students received one-hour tutoring sessions four times a week; three students received more intensive training (four hours a day, for six weeks). All students showed marked improvement on three measures of reading (i.e., auditory conceptualization, word identification, and word attack). The authors conclude the ADD program helps students obtain phonological awareness and apply alphabetic reading skills.

- Truch (1994) analyzed test data from 281 students (ranging from age 5 to 55, average age was 13). Following 80 hours of training (four to five hours a day, five days a week), students made positive gains on several measures of reading. Those improvements were noted in phonological awareness, sound/symbol connections, and decoding. One interesting finding from this

study was that age was positively associated with increased learning, which, as the author notes, contradicts the idea that "older students cannot be taught any more of the 'basics'" (p. 72).

Help One Student to Succeed

Program Description The *Help One Student to Succeed* (HOSTS) Language Arts program is a structured tutoring program for low-achieving students in grades prekindergarten through 12. It is designed to improve reading, vocabulary, writing, comprehension, study skills, and problem-solving skills. Tutors are usually community volunteers (Reynolds, 1993). The HOSTS program was developed by a former educator (William Gibbons) and is distributed through his nonprofit corporation, the HOSTS Corporation.

A HOSTS-trained teacher develops individualized lesson plans for each student's tutoring session. The program's strategy is to start with activities that focus on the student's particular interests (such as sports or animals) and build on the student's current strengths. The student and tutor then move on to individualized activities that will strengthen the student's weaker areas. The tutor guides the student through the pre-planned lessons and provides positive reinforcement. At the end of each lesson, the tutor records comments about the student's progress for the teacher.

During a lesson, the tutor does not necessarily provide instruction but encourages and builds the confidence of the student (Zey, 1994). Each half-hour session begins with a set of vocabulary words that are pronounced, defined, and used correctly within a sentence. Next, the student works on mastering a particular skill, such as practicing the long vowel *o* sound and learning to recognize it in words. For the final fifteen minutes, student and tutor take turns reading aloud from a story chosen to match the student's reading level. The tutor records feedback about the student's progress to help the teacher or HOSTS coordinator develop future sessions.

Tutoring sessions occur at least four days per week. The other day can be used for additional tutoring, small-group work, work with classroom teachers, evaluation of student progress, or preparation of individualized lessons. The sessions can be administered as a classroom program, as a modified pullout program, or before- and after-school (Bryant, Edwards, & LeFiles, 1995). The length of time students are in the HOSTS program will vary, depending on individual student need (B. Marshall, personal communication, November 18, 1996).

HOSTS features a computer database, a collection of resources (such as books, games, and classroom exercises) and instructional strategies that are aligned to certain objectives and skills. The database is used to select strategies and materials appropriate for students (Martz, 1992). Using the database, the HOSTS teacher creates lesson plans specially designed for individual students and focused on four main areas:

- Reading literature and extension activities
- Learning reading skills including phonetic analysis, structural analysis (e.g., decoding and blending), vocabulary, comprehension, and study skills
- Writing skills such as grammar, sentence structure, spelling, handwriting, paragraph development and written compositions
- Learning vocabulary by recognizing and understanding words (HOSTS material)

In addition, the HOSTS program addresses the Texas essential elements and includes a system for assisting students in mastering TAAS objectives (B. Marshall, personal communication, November 18, 1996).

Implementation Requirements Implementation of the HOSTS program does not usually require additional personnel; however, the duties of some existing staff will need adjustment. Typically, a teacher who is experienced working with low-achieving students becomes the HOSTS coordinator. In 1996–97, the initial licensing fee is $27,900 per school, plus an annual maintenance fee of $5,600 per school (HOSTS communication, November 18, 1996). As part of the cost of the program, HOSTS provides initial training for the facilitating teachers. HOSTS also provides follow-up support, program modification, and technical support. The HOSTS computer database can be operated on either a Macintosh platform or PC platform (Windows 95 or better).

Evidence of Program Effects HOSTS was recognized by the U.S. Department of Education as a National Diffusion Network program. It has also been recognized by the National Dropout Prevention Center and the National School Boards Association.

- In 1994–95, the Edgecombe County Schools, North Carolina, implemented the HOSTS program in five elementary schools with 184 first- through third-grade students. Three schools had implemented the HOSTS program for seven months; two had implemented the program for four-and-a-half months. Schools reported gains in first, second, and third grade reading based upon the California Achievement Test. The largest improvements were attained by the first and second grades (Bryant et al., 1995). It is not clear whether these gains are entirely attributable to HOSTS—the county had also recently implemented Reading Recovery, a tutoring program for first-grade students.[18]

- HOSTS Corporation provided data on the use of its program with students in several schools in Ohio and Michigan. Participant scores exceeded the district averages ("Data results," n.d.).[19]

Programmed Tutorial Reading

Program Description *Programmed Tutorial Reading* (PTR), a structured tutoring program for low-achieving students in kindergarten through grade 6, is intended to supplement regular classroom instruction. PTR can be used with current reading materials, including basal readers and trade books. Originally developed by researchers at Indiana University, PTR is designed to help students who are failing reading.

Students receive daily 15-minute tutoring sessions. During each session, students read from basal readers supplemented with special texts that introduce comprehension, word coding, and decoding. The tutoring kits are designed to match six commonly-used basal reading series and contain instructions for the tutor that carefully control instructional methods. Highly structured tutoring sessions are intended to improve reading skills such as comprehension, oral reading, word analysis, and sentence completion.

Each session is focused around reading and providing feedback. The tutor provides constant and immediate feedback while recording mistakes on a chart. The tutor follows specific instructions for reteaching material that the student has not mastered. The tutor then tests for mastery. This method of instruction is referred to as test-teach-test. Once a week, a supervisor (an individual designated as the supervisor for PTR) listens to each student and offers suggestions to teachers and tutors about instruction. Once every two weeks, the PTR supervisor meets with tutors to discuss the progress of students.

A video describing this program listed five main points that underlie each tutoring session:

- Students progress at their own rate.
- Students are actively involved; they read instead of just listening.
- Students are praised for success and not criticized for mistakes.
- Reading materials are presented systematically and mastered one step at a time.
- Students independently discover answers.

Students remain with the same tutor each day for the entire school year. Tutors may work either in the regular classroom or in a separate PTR classroom.

The *Programmed Tutorial Reading* program was approved by the U.S. Department of Education as a National Diffusion Network effective program.

Implementation Requirements A required two-day training session for tutors and the PTR supervisor may be supplemented with additional workshops as needed. During training, tutors learn how to follow a tutoring guide, record student progress, and present reports about students to their classroom teachers. Costs for training ($350 a day) plus PTR staff preparation time are approximately $1,050 plus travel expenses. Materials for PTR include a tutoring kit for each tutor and student books. A complete tutoring kit for grades 1 through 4 costs $475. The cost of student books depends upon which basal series or reading materials are used in the school.

District staffing for the implementation of PTR includes a project director, tutorial supervisor, and tutors. The tutorial supervisor oversees the project among the schools and manages the tutors. Typically, the tutorial supervisor is a certified teacher. Tutors are usually paid. Spending about fifteen minutes with each student, a tutor can handle about seven students during two hours. Tutors are paraprofessionals or high school students. As an alternative, a volunteer component of PTR involves less training time and a simpler teaching strategy (S. Ross, personal communication, December 19, 1996).

Evidence of Program Effects In one study, students tutored with PTR showed greater than expected gains on reading tests. In another, they scored higher than a comparable group on vocabulary and comprehension tests.

- One study, the 1994–95 Title I evaluation, was based on the use of PTR in the Davis County School District, Salt Lake City, Utah. More than 1,000 students in first, second, and third grade in 19 elementary schools participated in PTR. Reporting the average reading subtest scores for students on the California Achievement Test, average gains were greatest at the first grade level. Students in the third grade and fourth grade also posted fairly large gains. The program had more modest effects for second-grade students (Research & Development Consultants, 1995).[20]

- In a review of effective pullout programs, Madden and Slavin (1989) summarized the findings of a PTR evaluation where students receiving tutoring were compared to students not receiving tutoring. The scores of PTR students on measures of vocabulary and comprehension compared to the non-tutored students were different (but not significantly) in favor of the PTR group.

Reading One-One

Program Description *Reading One-One* (ROO) is a structured tutorial program for students in kindergarten through grade 8. Designed at the University of Texas at Dallas, it builds upon some elements of *Reading Recovery* and *Success for All.* The purpose of ROO is to provide low-cost, high-quality reading instruction to low-performing students during the school day. The overall goal of ROO is to guide students and provide practice time so they can achieve at grade level.

There are three classification levels to *Reading One-One:* Alphabet Students, Word Family Students, and Reading Ready Students. Placement in one of these three levels is determined by how well a student performs on tests measuring knowledge of letter names and sounds and word families, while actual reading level is determined by cloze tests.[21]

Tutoring sessions last 40 minutes and occur three or four days a week, depending upon the school schedule. During a session, the student focuses on learning letter and sound relationships, using sounds to read words in

connected text, understanding what is read, and expressing oneself in print. Each session is composed of four parts:

- The previous lesson is reviewed.
- New material—letters and sounds, word families, or new books—is presented.
- The tutor reads with the student or the student practices identifying high-usage words.
- The student engages in creative writing.

Students are assessed every fifth session to determine progress. Upon achieving a set mastery level, the student moves to the next program level. In the 1994–95 school year, 2,500 Dallas ISD students selected for the program by their teachers and principal received an average of 60 tutoring sessions (Farkas, Fischer, Vicknair, & Dosher, 1995).

Implementation Requirements Paid tutors may be university students, members of community-based organizations, or teacher aides. Tutor candidates attend two three-hour certification sessions. During these sessions, they are given a manual that describes assessment procedures and the methods for tutoring sessions. Upon passing the certification test, tutors are placed in a school. Site coordinators sit with each tutor to provide feedback and advice. After several weeks, tutors are evaluated and, upon a successful evaluation, are given ROO certification. Tutors are required to work at least six hours per week on at least two separate days and are paid hourly. Additional materials needed to implement ROO include the Wright Group Books and the Woodcock-Johnson Reading Comprehension Scale.

There are two methods of implementing ROO. With one method, the ROO staff train school personnel and provide materials, enabling the school to administer the program on its own with support from ROO staff. In a second model, ROO university staff hire, train, and manage tutors and provide tutoring instruction. This model is available at the Universities of Texas at Dallas, San Antonio, and Brownsville. Costs for either version of the program are approximately $600 per child for one year of tutoring.

Evidence of Program Effects ROO is included in the President Clinton's reading plan which, like the Texas Reading Initiative, addresses the goal of students learning to read by the end of third grade (President Clinton's "America Reads" Challenge, August 27, 1996).

- Farkas and Vicknair (1995) examined the progress made by 1,373 first-, second-, and third-grade students who had received at least 25 tutoring sessions in the 1994–95 school year. On two separate measures of reading, students made substantial progress during the course of one year, but did not, on average, reach their grade level. Subsequent analysis showed that the students continue to make gains in their reading ability with additional tutoring. Estimated effects for 100 sessions are gains of 7.3 months for first grade students, gains of 7.8 months for second grade students, and gains of 6.7 months for third grade students.[22]

Reading Recovery

Program Description The *Reading Recovery* (RR) tutoring program serves first-grade children whose reading skills place them among the lowest 10 percent to 20 percent at their school (Bracey, 1995). The goals of the program are for students to read at a level equal to the school's average reading level and to teach students reading strategies that will encourage further improvement in their reading ability (Bracey, 1995). *Reading Recovery* was originally developed by Marie Clay in New Zealand and has been managed in the U.S. by researchers at Ohio State University. Through RR, students build their basic reading skills, learn to monitor their own reading, develop good reading habits (such as rereading unclear words), and develop an understanding of how to gain meaning from text (Adams, 1990). RR has been described as a balanced approach that "helps students understand the nature of text and reading" (Adams, 1990, p. 421).

Each student in RR takes an observation survey designed to assess his or her ability to recognize letters and words, knowledge of print structure and functions, ability to read passages orally, ability to hear and record sounds, and writing vocabulary. In the early weeks of tutoring, the student and teacher work with what the student already knows. During that time, the teacher learns more about the student's abilities. After the first several weeks, the RR program typically includes various activities during a tutoring session including the following:

- Rereading of books introduced in previous lessons
- Independent reading of the preceding lesson's book while the teacher records student's errors
- Learning about letters
- Learning how words work—which includes learning about sounds and how words are written
- Writing a story
- Introducing and reading new books

New books are introduced every day, and familiar books are reread during each lesson. Students receive 30 minutes of daily one-on-one instruction during a 12- to 20-week period. Students conclude the program when they can read strategically at a level comparable to the average reading level at the school. In other words, students end tutoring sessions when they can read at a certain grade level and know how to use reading strategies.

Implementation Requirements Teachers using RR receive training in weekly sessions throughout the school year and participate in frequent on-site supervision by trainers. RR uses only certified classroom teachers. After the training year, teachers attend a minimum of four to six sessions a year with their trainers and, if possible, attend annual RR conferences.

Cost estimates of RR vary. Dyer (1992) calculated the cost of RR to be $2,063 per student (i.e., average teacher salary at $33,000 divided by 16 students). Hiebert (1994) finds this estimate to be low because certain costs were excluded: teacher training costs, the costs of teacher benefits, and

installing a training room. Moreover, initial estimates that one teacher could serve 16 students during the year has not been met at most sites. The average is closer to 11 or 12 students per year. Hiebert (1994) estimates the cost per successful student to be approximately $8,300.

Evidence of Program Effects *Reading Recovery* was approved by the U.S. Department of Education as a National Diffusion Network effective program.

- Shanahan and Barr (1995) synthesized evaluations of RR research. By comparing results from many studies of RR, the authors made several conclusions about the effects of RR. First, the authors concluded that many children who are instructed with RR are brought up to similar reading levels as their average-achieving peers. The program does not work for all children, but those who respond to RR leave the program with "well-developed reading strategies, including phonemic awareness and knowledge of spelling" (p. 989). Second, RR students learned as much or more than other similar students who did not receive special instruction or Title I instruction. Third, following RR instruction, students progress at somewhat lower rates than the average of their class. The issues seem to be discrepancies in instructional programs (between RR and regular classroom instruction) and a need for ongoing support beyond RR during first grade.

- Center, Wheldall, Freeman, Outhred, and McNaught (1995) examined reading performance of Australian first graders using a battery of assessments measuring book level reading skills, letter identification, print concepts, word tests, writing vocabulary, dictation, passage reading, spelling, phonemic awareness, syntactic awareness (cloze), and word attack skills. Their study included groups of 23 to 39 low-progress students from 10 schools: (1) the RR group, (2) a control group from the same schools, and (3) a comparison group from five matched schools not implementing RR. Students in these groups were pre-tested prior to any RR instruction, post-tested again after 15 weeks (the average time students stay in RR), again 15 weeks later, and after one year. Testing after the first 15 weeks showed RR students making significantly greater gains on all but the cloze and the phonemic awareness tests, indicating that RR students outperformed control students on all tests measuring words read in context and in isolation, but not on some tests of metalinguistic skills. When retested after an additional 15 weeks, the RR group continued to perform significantly better than control students in all areas except phonological recoding and syntactic awareness (two areas not specifically addressed by RR). After one year, with only 16 students remaining in the control group, significant differences between RR and control students could no longer be found.

- Pinnell, Lyons, DeFord, Bryk, and Seltzer (1994) examined elements of RR compared to other reading instruction methods. The authors chose programs that were similar to RR except for one or two characteristics. These characteristics included length of training for teachers, instructional methods, and student-teacher ratio. The research design included ten different district sites and randomly assigned students, and students were assessed using a battery

of tests (Woodcock-Johnson Reading, dictation task, text reading level, and Gates-MacGinitie) both before and after exposure to the program. One conclusion from this study was that RR was the only program studied that produced significant and positive effects on reading post-treatment, based on a fall-to-spring design. Other conclusions from this study were: (1) programs that involve less training resulted in lower student gains; (2) one-on-one instruction was a factor in the success of RR but not the only factor—the instructional model was also important; and (3) trained RR teachers were more successful working with individuals than working with groups (Pinnell et al., 1994). When comparing fall-to-fall test scores, the most positive effects were found for RR on dictation and text reading level.

- Arkansas adopted the RR program in 1988 for statewide use. From 1991 to 1994, 1,088 students received the full RR program (defined as having received 60 lessons). Among those students, 940 (or 86 percent) attained grade level. A follow-up study of 59 students who successfully completed the program was conducted for two years after their involvement with RR. Compared to a random sample of non-RR students, the RR students performed at the same or higher levels on measures of dictation, spelling, and text reading in both the third and fourth grade ("Getting elementary schools ready," 1996).

- Compared to a group of similar low-achieving students, those in RR programs performed significantly better on a battery of diagnostic tests upon completion of the program (Iversen & Tunmer, 1993). Students in a standard RR program took longer to reach the same level of reading as compared to students in a modified RR program. In the modified RR program, explicit instruction in letter-phoneme patterns replaced the Letter Identification segment of the RR lesson when the children demonstrated that they could identify at least 35 of the 54 alphabetic characters.[23]

- Hiebert (1994) reviewed the RR research and found that proficiency levels for students from RR programs differed on varying tasks when compared to similar non-RR students. Reading Recovery students attained the average school level when asked to orally read text. However, when the task included comprehension and identification of unknown words, RR students performed similarly to other low-achieving students. Hiebert (1994) also found that the effects of RR were not maintained through the fourth grade.

Recipe for Reading

Program Description *Recipe for Reading* (RFR) was adapted from an Orton-Gillingham approach designed by Nina Traub during her work with a New York school district. RFR is designed for individual instruction with first- through third-grade students, and it may also used for small-group and whole-class instruction. Today RFR is most often used in self-contained special education and resource classrooms.

RFR uses a synthetic phonics approach. Following a parts-to-whole progression, individual letter sounds are taught in isolation before syllables or words are introduced. Letters are presented in a sequence based on the ease with which they are learned and written. Children's senses are involved throughout the program: they learn the letter *j* by writing it with a finger in a plate of jam, they form the letter *p* with peanut butter, they walk along letters shaped from masking tape on the floor, and they write letters in the sky with their hands.

In RFR, spelling comes before reading. After students recognize and can write the first nine letters in the sequence, they are taught to spell consonant-vowel-consonant words using the letters. As the teacher dictates words, students spell them orally and write them. The teacher repeats words that students find difficult, separating them into phonemes. Students are asked to identify the letter representing the initial, middle, and final sound in the word. After students learn to spell words, they are asked to read them from flash cards. Later lessons involve dictation and reading of phrases and sentences while the teacher helps with nonphonetic words. Next, students read from phonetic story books and dictate their own stories. Lessons gradually introduce two-syllable compound words (such as *pigpen)* and two-syllable phonetically regular words (such as *dislike),* progressing through sounds of all single letters and combinations of letters. Finally, older students learn rules concerning affixes.

Implementation Requirements Training is usually done within the school. In summer, teachers are trained over a two-week period. Daily five-hour sessions are spent in lecture, supervised tutoring of summer-school students, and discussion. Training during the school year consists of six hours of lecture with individually-arranged, supervised tutoring for each trainee. The RFR teacher's manual contains short, easy-to-follow lessons. Also available are RFR workbooks, writing paper, record-keeping pads, and a series of 21 storybooks called *Alphabet Series.*

Evidence of Program Effects The primary study evaluating the effects of RFR was conducted in the mid 1970s (Traub, 1982). On the basis of those findings, the tutorial program (which had not yet been named "Recipe for Reading") received a federal Validation grant.

- A group of 25 second-grade students were provided with the RFR tutoring. Compared to another group of 25 second-grade students, who received instruction through an undescribed tutoring program, the RFR students scored significantly higher on several measures of decoding, comprehension, vocabulary, and spelling (Traub, 1982).[24]

Elements of Research-Based Reading Programs

After summarizing the existing reading research, the Texas Education Agency drew several conclusions about how to characterize research-based programs for beginning reading instruction. Specifically, TEA researchers have identified twelve essential components directly related to classroom instruction and eight features of classrooms and schools that support instruction. This information is contained in a book entitled *Beginning Reading Instruction: Components and Features of a Research-Based Reading Program.* To obtain a copy of this book, send a request for this document along with a check or money order for $1.50 to TEA Publications, P.O. Box 13817, Austin, TX 78711.

Briefly, the 12 components and features essential for beginning reading instruction are named here. These components of research-based programs should offer children many opportunities:

- To expand their use and appreciation of oral language
- To expand their use and appreciation of printed language
- To hear good stories and information books read aloud daily
- To understand and manipulate the building blocks of spoken language
- To learn about and manipulate the building blocks of written language
- To learn the relationship between the sounds of spoken language and the letters of written language
- To learn decoding strategies
- To write and relate their writing to spelling and reading
- To practice accurate and fluent reading in decodable stories
- To develop new vocabulary through wide reading and direct vocabulary instruction
- To read and comprehend a wide assortment of books and other texts
- To learn and apply comprehension strategies as they reflect upon and think critically about what they read

Eight features further characterize classrooms and schools as supportive of this type of research-based reading program:

- Careful use of instructional time
- Effective instructional practices
- Sound instructional materials
- Reading opportunities
- Variety of assessment tools
- Positive campus climate
- Professional development
- Sound administrative practices

Endnotes

[1] Evaluations conducted by the program developer were accepted if the study was published in a peer-reviewed journal.

[2] ECRI submitted materials to the U.S. E.D.'s Program Effectiveness Panel for reapproval in 1996. However, the panel was discontinued before it could act on ECRI's reapproval request.

[3] NCE is an abbreviation for Normal Curve Equivalent. This is a "standardized scale of scores developed by the U.S. Department of Education. Text takers scoring at the mean get an NCE of 50; persons scoring in the 1st percentile get a score of 1; those in the 99th percentile, a score of 99. The standard deviation for the NCE is 21.06" (Vogt, 1993, p. 155). NCEs are typically used in reporting Title I outcome data. One benefit of NCE units is that student performance on a variety of tests can be compared since NCE units have the same meaning across tests and subtests (RMC Research, personal communication, July 17, 1997).

[4] This restructured Chapter 1 program is referred to in the Foorman et al. (1996) study as Embedded Phonics. It emphasizes phonemic awareness and spelling patterns through whole class and small group activities.

[5] The authors used a fall-to-spring test design. The baseline scores were taken in October, post-treatment scores were taken in April and then again in May.

[6] Wolf (1985) did not have pre-instruction achievement scores and little information is available about the instruction received by the control students (described as an "eclectic basal reader approach").

[7] The range of effect sizes for those five studies is from -0.41 to 2.00.

[8] Because the authors did not provide any of the data tables to support their conclusions, it is difficult to judge the accuracy of their findings. Other problems with the research (i.e., fidelity of AR implementation, small sample size, and lack of specific information about pre-test scores for both control and experimental students) suggest these results should be interpreted with caution.

[9] The authors state the differences are significant based upon multiple regression analysis. Unfortunately, they did not provide any evidence or data to support this claim.

[10] There was no response to our request for a review of this section.

[11] No control group was used in the research design; the findings should be interpreted with caution. The authors also did not indicate if AP was the only form of reading instruction the students received or if students participated in other reading instruction programs.

[12] No control group was used in the research design; the findings should be interpreted with caution.

[13] No control group was used in the research design; the findings should be interpreted with caution.

[14] The authors did not describe the characteristics of either group, thus it is difficult to say that students in the "control" group provided an accurate comparison. An examination of pre-treatment test scores show that the mean for the control group was higher than the treatment group. The authors do not indicate whether this difference was statistically significant.

[15] A control group was not used in the research design. Furthermore, the authors do not describe how Alphabetic Phonics was modified. Findings should be interpreted with caution.

[16] The Enfield and Greene reference distinguishes this Project Read from another program of the same name that was created by a Stanford University professor (Robert Calfee).

[17] No control group was used in the research design; the findings should be interpreted with caution.

[18] There are a couple of other problems with the research as reported. First, the authors do not compare HOSTS students to a similar group of students not in the HOSTS program (i.e., no control group). Second, the design is a fall-to-spring design, which tends to exaggerate the effects of treatment.

[19] Control groups were not identified. Findings should be interpreted with caution.

[20] The study used a spring-to-spring testing design, but did not include a comparison of these scores to those of a similar group of students.

[21] With cloze tests, students read a story with every nth word deleted, typically, every fifth or tenth word. Students use the context of the story to fill in deleted words (Reutzel & Cooter, 1992). Students continue this process with increasingly difficult stories until they score in the 60 to 80 percent range. When they arrive at that range, this determines the grade level at which they can read (Farkas, n.d.).

[22] This analysis was based upon a fall-to-spring testing design.

[23] The 54 alphabetic characters are 26 uppercase and 28 lowercase letters, two of which appear in varying fonts.

[24] The author did not provide information about the comparison tutorial program, the length of time students received remedial instruction, and pre-treatment reading ability scores. Since this information was not reported, these findings should be interpreted with caution.

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